



03500.014384.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

MASAFUMI KYOGAKU ET AL.

U.S. Patent Appln. No. 09/506,289

Filed: February 18, 2000

For: ELECTRON-EMITTING DEVICE,  
ELECTRON SOURCE AND  
IMAGE-FORMING APPARATUS,  
AND MANUFACTURING  
METHODS THEREOF

) : Examiner: R. Berry

) : Group Art Unit: 2818

) : October 18, 2004

**RECEIVED**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

OCT 25 2004

OFFICE OF PETITIONS

INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the enclosed Form PTO-1449. Copies of the listed non-U.S. Patent documents are also enclosed.

Listed U.S. Patent No. 6,626,719 issued from Application No. 08/781,206, which was cited in an earlier Information Disclosure Statement in the present application.

Listed U.S. Patent No. 6,288,494 issued from U.S. Patent Application No. 09/513,842, which was cited in an earlier Information Disclosure Statement in the present application.

Listed U.S. Patent No. 6,472,814 issued from U.S. Patent Application No. 09/191,342, which was cited in an earlier Information Disclosure Statement in the present application.

Listed U.S. Patent No. 6,184,610 issued from U.S. Patent Application No. 08/690,964, which was cited in an earlier Information Disclosure Statement in the present application.

Listed U.S. Patent No. 6,246,168 issued from U.S. Patent Application No. 08/508,931, which was cited in an earlier Information Disclosure Statement in the present application.

Also, enclosed are copies of a Japanese Notification of Refusal Reason (and an English translation thereof) issued by the Japanese Patent Office on September 7, 2004 in related Japanese Application No. 2002-119052, and an Examiner Refusal Decision (and an English translation thereof) issued by the Korean Patent Office on March 19, 2003 in a Korean counterpart application.

The Notification of Refusal Reason cites JP Laid-Open Gazette H09-35620, which is listed on the attached Form PTO-1449. For the concise statement of relevance of the Laid-Open Gazette, the Examiner is respectfully referred to its attached English

abstract, the English version of the Notification of Refusal Reason, and the following representation:

H09-35620 discloses an activation process wherein pulse voltages are applied to conductive films in an atmosphere of material gas such as  $S_iH_4$ ,  $S_{i2}H_8$ ,  $CH_4$ ,  $C_2H_6$  etc., containing hydrogen gas to deposit carbon,  $S_i$  and a composite thereof which form a highly crystallized film. H09-35620 states that high crystallization means high occupancy of graphite or fine particles of  $S_iC$  and the degree of the crystallization is measured by TEM, Raman, etc.

It is also noted that Japanese documents 7-235255, 8-273523, and 64-19657 are cited in the Examiner Refusal Decision, and were cited previously in Information Disclosure Statements in the present application. As a supplemental concise explanation of relevance of those documents, the Examiner is respectfully referred to the Examiner Refusal Decision (English version), and to the following representation.

Document 7-235255 discloses that deposits mainly comprising carbon is arranged in a gap of the conductive film by applying pulse voltages to the conductive film in an atmosphere containing carbon. The paragraph [0118] states that electrically disconnections are partially formed in the deposits.

Document 8-273523 discloses in Figs. 1 (g) and (h) that film 8 of carbon or carbon composite is formed at the end portion of conductive film 4 in a lower potential side or at the end portion of conductive film in a higher potential side.

Document 64-019657 discloses that an electron emission part is formed by flowing a current through a thin film with heating the thin film by locally irradiating a laser light or infrared light.

CONCLUSION

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

Applicants' undersigned attorney may be reached in our New York office by

telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

  
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U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)  
(Use several sheets if necessary)

APPLICANT

MASAFUMI KYOGAKU ET AL.

Date Submitted to PTO:[DATE]

FILING DATE

FEBRUARY 18, 2004

GROUP

2818

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6,626,719	9/03	Ono et al.	445	24	
	6,288,494	9/01	Tsukamoto et al.	315	169.1	
	6,472,814	10/02	Yamanobe	313	495	
	6,184,610	2/01	Shibata et al.	313	309	
	6,246,168	6/01	Kishi et al.	313	495	
	5,532,544	7/96	Yoshioka et al.	313	310	
	5,986,389	11/99	Tsukamoto	313	310	

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	HO9-35620	2/97	Japan			Abstract

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

Fukano, Y., et al., *Scanning Force/Tunneling Microscopy as a Novel Technique for the Study of nanometer-Scale Dielectric Breakdown of Silicon Oxide Layer*, Jpn. J. Appl. Phys. Vol. 32 (1993) pp. 290-293, Part 1, No 1B, January 1993

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.